

Blue lines indicate the area meeting the ISRA Criteria; dashed lines indicate the suggested buffer for use in the development of appropriate place-based conservation measures

## TIKI ISRA

### New Zealand & Pacific Islands Region

#### SUMMARY

Tiki is located on the western side of Moorea Island in the Society Archipelago of French Polynesia. The area is characterised by mangrove and silt dominated areas with a homogenous mix of corals, algal turfs, sandflats, and rocky substrates. The area is influenced by low tidal variation and currents are generally oriented from the reef crest towards the channel, largely induced by waves. This area overlaps with the Lagon de Moorea Ramsar site and the Tetiaroa, Moorea et Tahiti Marine Key Biodiversity Area. Within this area there are: **threatened species** (e.g., Blacktip Reef Shark *Carcharhinus melanopterus*) and **reproductive areas** (e.g., Sharptooth Lemon Shark *Negaprion acutidens*).

#### Criterion A - Vulnerability; Sub-criterion C1 - Reproductive Areas

FRENCH  
POLYNESIA

0-10 metres

3.13 km<sup>2</sup>





## DESCRIPTION OF HABITAT

Tiki is located on the western side of Moorea Island in the Society Archipelago of French Polynesia. The area is located within Moorea's narrow lagoon system and encompasses mangrove and silt dominated areas with a homogenous mix of corals, algal turfs, sandflats, and rocky substrates (Bouyoucos et al. 2023; Eustache et al. 2024). The area is influenced by low tidal variation (~20-30 cm) (Bouyoucos et al. 2023) and currents generally oriented from the reef crest towards the channel, largely induced by waves (Ramsar Convention 2008; Berthe et al. 2018).

This area overlaps with the Lagon de Moorea Ramsar site (Ramsar Convention 2008) and the Tetiaroa, Moorea et Tahiti Marine Key Biodiversity Area (KBA 2024).

This Important Shark and Ray Area is benthopelagic and is delineated from inshore and surface waters (0 m) to 10 m based on the bathymetry of the area.

## ISRA CRITERIA

### CRITERION A - VULNERABILITY

Two Qualifying Species considered threatened with extinction according to the IUCN Red List of Threatened Species regularly occurs in the area. These are the Endangered Sharptooth Lemon Shark (Simpfendorfer et al. 2021) and the Vulnerable Blacktip Reef Shark (Simpfendorfer et al. 2020).

### SUB-CRITERION C<sub>1</sub> - REPRODUCTIVE AREAS

Tiki is an important reproductive area for two shark species.

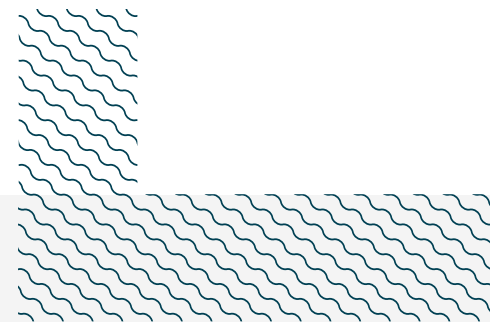
Between 2015-2022, a fisheries-independent survey was conducted in ten locations around Moorea (Mourier & Planes 2013; Bouyoucos et al. 2023). The area was sampled twice per month, between October-February, using a monofilament gillnet (50 m x 1.5 m, with a 5 cm mesh size) set perpendicular to the shore for approximately three hours in the evening. Fishing survey data were used to quantify catch-per-unit-effort (CPUE, sharks h<sup>-1</sup>) per site and per survey season each year (Bouyoucos et al. 2023). Captured animals were fin-clipped, sexed, measured, weighed, and life stage was estimated based on size (total length, TL) (Bouyoucos et al. 2023).

Between 2013-2020, a total of ~163 neonates and young-of-the-year (YOY) Blacktip Reef Sharks were captured in the area (Physioshark Lab unpubl. data 2024) with a CPUE (mean) of 0.8 (Bouyoucos et al. 2023). Almost all individuals collected were neonates or YOY aged 0-1 year as confirmed by the presence of open or recently closed umbilical scars (Bouyoucos et al. 2023). Size-at-birth for the species is 30-52 cm TL (Ebert et al. 2021). The seasonal pattern for parturition occurs annually from October-February when neonates and YOY are captured (Mourier & Planes 2013). Neonates exhibited residency to the area, represented by the number of individuals that were recaptured at least once each survey season/year (2015 = 1, 2016 = 1, 2017 = 2, 2019 = 1) (Bouyoucos et al. 2023).

Individuals captured across the 10 sites in Moorea (n = 1,607) included 52.2% neonates (n = 839), which were 35 days old or younger, and 46.7% YOY (n = 751), which were older than 36 days (Physioshark Lab unpubl. data 2024). Adults of Blacktip Reef Shark accounted for only 1.1% (n = 17) of the total captures around Moorea (Physioshark Lab unpubl. data 2024).

Tiki is one of the several areas of importance for neonates and YOY Blacktip Reef Sharks that have been identified around Moorea (Mourier & Planes 2013; Bouyoucos et al. 2023; Eustache et al. 2024). The existence of several of these areas dispersed around the island is attributed to the small home ranges of neonatal Blacktip Reef Sharks in Moorea. Research using mark-recapture and acoustic telemetry has shown that these home ranges are the smallest documented for the species, likely due to the deep channels within Moorea's lagoon and the fragmented habitat (Bouyoucos et al. 2020). Additionally, pregnant female Blacktip Reef Sharks exhibit philopatry, returning to the same nursery for each birthing event (Mourier & Planes 2013). These factors together explain the presence of multiple nursery areas or areas that are crucial for neonate and YOY Blacktip Reef Sharks in Moorea.

Between 2017–2022, a total of 121 neonates and YOY Sharptooth Lemon Sharks were captured in the area (Physioshark Lab unpubl. data 2024). Additionally, between 2015–2020, the area had a CPUE of 0.8 individuals h<sup>-1</sup> across the entire study period, having the second higher relative neonate abundance compared to the other nine sites surveyed around Moorea (Bouyoucos et al. 2023). These sharks were confirmed to be neonates or YOY based on their size (Bouyoucos et al. 2023), considering that size-at-birth is 45–80 cm TL (Ebert et al. 2021). Neonates exhibited residency to the area, represented by the recapture rate, calculated for each year as the proportion of individuals that were recaptured at least once out of the total number of captured individuals during that same year (2015 = 5, 2016 = 2, 2017 = 3, 2018 = 7, 2019 = 3) (Bouyoucos et al. 2023). Although adult females were not captured in the area, Sharptooth Lemon Sharks around Moorea follow a biennial reproductive pattern, exhibiting philopatry to nursery areas with a seasonal parturition period between August–October (Mourier et al. 2013).



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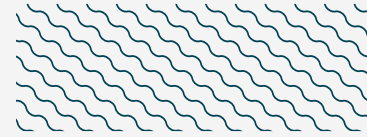
## Suggested citation

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## QUALIFYING SPECIES

Scientific Name	Common Name	IUCN Red List Category	Global Depth Range (m)	ISRA Criteria/Sub-criteria Met									
				A	B	C1	C2	C3	C4	C5	D1	D2	
<b>SHARKS</b>													
<i>Carcharhinus melanopterus</i>	Blacktip Reef Shark	VU	0-100	X		X							
<i>Negaprion acutidens</i>	Sharptooth Lemon Shark	EN	0-90	X		X							

IUCN Red List of Threatened Species Categories are available by searching species names at [www.iucnredlist.org](http://www.iucnredlist.org). Abbreviations refer to: CR, Critically Endangered; EN, Endangered; VU, Vulnerable; NT, Near Threatened; LC, Least Concern; DD, Data Deficient.



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